

TOP SECRET

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ABSTRACT

An implantable devices for the effective elimination of an arrhythmogenic site from the myocardium is presented. By inserting small biocompatible conductors and/or insulators into the heart tissue at the arrhythmogenic site, it is possible to effectively eliminate a portion of the tissue from the electric field and current paths within the heart. The device would act as an alternative to the standard techniques for the removal of tissue from the effective contribution to the hearts electrical action which require the destruction of tissue via energy transfer (RF, microwave, cryogenic, etc.). This device is a significant improvement in the state of the art in that it does not require tissue necrosis.

In one preferred embodiment the device is a non conductive helix that is permanently implanted into the heart wall around the arrhythmogenic site. In variations on the embodiment, the structure is wholly or partially conductive, the structure is used as an implantable substrate for anti arrhythmic, inflammatory, or angiogenic pharmacological agents, and the structure is deliverable by a catheter with a disengaging stylet. In other preferred embodiments that may incorporate the same variations, the device is a straight or curved stake, or a group of such stakes that are inserted simultaneously.